Introduction

Beginning with the 2005-06 school year, every student must pass the California High School Exit Examination (CAHSEE) to receive a high school diploma from a California public school. Students in the Class of 2006 had their first opportunity to take the CAHSEE in February and March 2004.

All questions on the CAHSEE are evaluated by committees of content experts, including California educators, teachers, and administrators, to ensure the questions' appropriateness for measuring the designated California academic content standards in English-language arts and mathematics. In addition to content, all items are reviewed and approved to ensure their adherence to the principles of fairness and to ensure no bias exists with respect to characteristics such as gender, ethnicity, and language.

This document combines released test questions that have appeared on CAHSEE test forms since the 2000-2001 school year, and contains new test questions from the 2004-2005 school year. The questions are grouped by strand (e.g., Number Sense). At the beginning of each strand section is a list of the specific standards assessed on the CAHSEE. Following a group of questions is a table that gives the correct answer for each question, the content standard each question is measuring, and the year each question originally appeared on the CAHSEE.

The following table lists each strand, the number of items that appear on the exam, and the number of released test questions that appear in this document.

STRAND	NUMBER OF QUESTIONS ON EXAM	NUMBER OF RELEASED TEST QUESTIONS
• Number Sense (NS)	14	29
• Statistics, Data Analysis, and Probability (PS)	12	23
• Algebra and Functions (AF)	17	30
• Measurement and Geometry (MG)	17	35
• Mathematical Reasoning (MR)	8	17
• Algebra I (1A)	12	30
TOTAL	**80**	**164**

In selecting test questions for release, three criteria are used: (1) the questions adequately cover the content standards assessed on the CAHSEE; (2) the questions demonstrate a range of difficulty; and (3) the questions present a variety of ways each standard can be assessed. These released test questions do not reflect all of the ways the standards may be assessed. Released test questions will not appear on future tests.

For more information about the CAHSEE, visit the CDE's Web site at http://www.cde.ca.gov/ta/tg/hs.

NUMBER SENSE

The following ten California mathematics academic content standards from the Number Sense strand are assessed on the CAHSEE by 14 test questions and are represented in this booklet by 29 released test questions. These questions represent only a few of the ways in which these standards may be assessed on the CAHSEE.

GRADE 7 — NUMBER SENSE	
Standard Set 1.0	**Students know the properties of, and compute with, rational numbers expressed in a variety of forms:**
1.1	Read, write, and compare rational numbers in scientific notation (positive and negative powers of 10) with approximate numbers using scientific notation.
1.2	Add, subtract, multiply, and divide rational numbers (integers, fractions, and terminating decimals) and take positive rational numbers to whole-number powers.
1.3	Convert fractions to decimals and percents and use these representations in estimations, computations, and applications.
1.6	Calculate the percentage of increases and decreases of a quantity.
1.7	Solve problems that involve discounts, markups, commissions, and profit, and compute simple and compound interest.
Standard Set 2.0	**Students use exponents, powers, and roots, and use exponents in working with fractions:**
2.1	Understand negative whole-number exponents. Multiply and divide expressions involving exponents with a common base.
2.2	Add and subtract fractions by using factoring to find common denominators.
2.3	Multiply, divide, and simplify rational numbers by using exponent rules.
2.4	Use the inverse relationship between raising to a power and extracting the root of a perfect square integer; for an integer that is not square, determine without a calculator the two integers between which its square root lies and explain why.
2.5	Understand the meaning of the absolute value of a number; interpret the absolute value as the distance of the number from zero on a number line; and determine the absolute value of real numbers.

Number Sense

1. The radius of the earth's orbit is 150,000,000,000 meters. What is this number in scientific notation?

A 1.5×10^{-11}

B 1.5×10^{11}

C 15×10^{10}

D 150×10^{9}

M00213

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2. $\mathbf{3.6 \times 10^2 =}$

A 3.600

B 36

C 360

D 3,600

M00036

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3. The five members of a band are getting new outfits. Shirts cost $12 each, pants cost $29 each, and boots cost $49 a pair. What is the <u>total</u> cost of the new outfits for <u>all</u> of the members?

A $90

B $95

C $450

D $500

M00331

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4. $\mathbf{\frac{11}{12}-\left(\frac{1}{3}+\frac{1}{4}\right)=}$

A $\frac{1}{3}$

B $\frac{3}{4}$

C $\frac{5}{6}$

D $\frac{9}{5}$

M02048

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5. Which of the following numerical expressions results in a negative number?

A $(-7) + (-3)$

B $(-3) + (7)$

C $(3) + (7)$

D $(3) + (-7) + (11)$

M00116

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6. One hundred is multiplied by a number between 0 and 1. The answer has to be

A less than 0.

B between 0 and 50 but not 25.

C between 0 and 100 but not 50.

D between 0 and 100.

M00275

Number Sense

7. John uses $\frac{2}{3}$ of a cup of oats per serving to make oatmeal. How many cups of oats does he need to make 6 servings?

A $2\frac{2}{3}$

B 4

C $5\frac{1}{3}$

D 9

M23015

8. If Freya makes 4 of her 5 free throws in a basketball game, what is her free throw shooting percentage?

A 20%

B 40%

C 80%

D 90%

M00223

9. Some students attend school 180 of the 365 days in a year. About what part of the year do they attend school?

A 18%

B 50%

C 75%

D 180%

M00047

10. The cost of an afternoon movie ticket last year was $4.00. This year an afternoon movie ticket costs $5.00. What is the percent increase of the ticket from last year to this year?

A 10%

B 20%

C 25%

D 40%

M02158

11. The price of a calculator has decreased from $12.00 to $9.00. What is the percent of decrease?

A 3%

B 25%

C 33%

D 75%

M02868

12. The weekly sales of a magazine increased from 500,000 to 600,000. By what percent did the magazine sales increase?

A 17%

B 20%

C 83%

D 120%

M11242

13. Sally puts $200.00 in a bank account. Each year the account earns 8% simple interest. How much interest will be earned in three years?

A $16.00

B $24.00

C $48.00

D $160.00

M02119

Number Sense

14. A pair of jeans regularly sells for $24.00. They are on sale for 25% off. What is the sale price of the jeans?

A $6.00
B $18.00
C $20.00
D $30.00

M02870

15. A CD player regularly sells for $80. It is on sale for 20% off. What is the sale price of the CD player?

A $16
B $60
C $64
D $96

M02425

16. Jana bought a car for $4200 and later sold it for a 30% profit. How much did Jana sell the car for?

A $1260
B $2940
C $5460
D $7140

M10580

17. A salesperson at a clothing store earns a 2% commission on all sales. How much commission does the salesperson earn on a $300 sale?

A $6
B $15
C $60
D $150

M20470

18. Which number equals $(2)^{-4}$?

A -8
B $-\frac{1}{16}$
C $\frac{1}{16}$
D $\frac{1}{8}$

M10015

19. $\frac{10^{-2}}{10^{-4}} =$

A 10^{-6}
B 10^{-2}
C 10^{2}
D 10^{8}

M02832

20. Which of the following is equivalent to $7^{-6} \cdot 7^{4}$?

A 7^{-24}
B 7^{-10}
C 7^{-2}
D 7^{2}

M12679

Number Sense

21. Which fraction is equivalent to $\frac{5}{6}+\frac{7}{8}$?

A $\frac{35}{48}$

B $\frac{6}{7}$

C $\frac{20}{21}$

D $\frac{41}{24}$

M12713

22. Which of the following is the prime factored form of the lowest common denominator of $\frac{7}{10}+\frac{8}{15}$?

A 5×1

B $2 \times 3 \times 5$

C $2 \times 5 \times 3 \times 5$

D 10×15

M02826

23. What is $\frac{3}{4}-\frac{1}{6}$?

A $\frac{1}{6}$

B $\frac{1}{3}$

C $\frac{7}{12}$

D $\frac{11}{12}$

M13552

24. $(3^8)^2 =$

A 3^4

B 3^6

C 3^{10}

D 3^{16}

M02406

25. $4^3 \times 4^2 =$

A 4^5

B 4^6

C 16^5

D 16^6

M02661

26. The square root of 150 is between

A 10 and 11.

B 11 and 12.

C 12 and 13.

D 13 and 14.

M02666

27. The square of a <u>whole</u> number is between 1,500 and 1,600. The number must be between

A 30 and 35.

B 35 and 40.

C 40 and 45.

D 45 and 50.

M00313

Number Sense

28. If $|x| = 3$, what is the value of x?

A –3 or 0

B –3 or 3

C 0 or 3

D –9 or 9

M02122

29. What is the absolute value of -4?

A -4

B $-\frac{1}{4}$

C $\frac{1}{4}$

D 4

M02667

Number Sense

Question Number	Correct Answer	Standard	School Year of Exam
1	B	7NS1.1	2001-2002
2	C	7NS1.1	2000-2001
3	C	7NS1.2	2001-2002
4	A	7NS1.2	2001-2002
5	A	7NS1.2	2000-2001
6	D	7NS1.2	2000-2001
7	B	7NS1.2	2003-2004
8	C	7NS1.3	2001-2002
9	B	7NS1.3	2000-2001
10	C	7NS1.6	2001-2002
11	B	7NS1.6	2000-2001
12	B	7NS1.6	2004-2005
13	C	7NS1.7	2001-2002
14	B	7NS1.7	2000-2001
15	C	7NS1.7	2000-2001
16	C	7NS1.7	2003-2004
17	A	7NS1.7	2004-2005
18	C	7NS2.1	2002-2003
19	C	7NS2.1	2001-2002
20	C	7NS2.1	2003-2004
21	D	7NS2.2	2002-2003
22	B	7NS2.2	2000-2001
23	C	7NS2.2	2003-2004
24	D	7NS2.3	2001-2002
25	A	7NS2.3	2000-2001
26	C	7NS2.4	2001-2002
27	B	7NS2.4	2000-2001
28	B	7NS2.5	2001-2002
29	D	7NS2.5	2000-2001